Operating Instructions
Resistance Thermometer WTH 160-250

Description

The resistance thermometer, type WTH 160-250 is designed to measure the temperature of high voltage motors in end shields or windings and at other points respectively which are suitable for measuring the temperature of this unit. It can be screwed in directly.

A sensor sleeve with a rotatable special-purpose screw M6 mounted on top houses a platinum thin-film resistance element. A soldered connection connects this resistance element with the shielded connecting lead. Both the resistance element and the connecting point to the connecting lead are completely covered with potting compound. For the purpose of strain relief the connecting lead is pressed in a transition sleeve connected with the sensor sleeve and embedded in a second transition sleeve. Protection against buckling is achieved by an elastic potting compound filled into the second transition sleeve after the fixing compound has been applied. A stainless steel spring is provided on the second transition sleeve for further protection against kinking. Equipotential bonding of the resistance thermometer WTH 160-250 is reached by screwing the sensor into the metal casing of the motor. The resistance thermometer WTH 160-250 can be provided with one or two resistance sensors. One sensor is suitable for thermometers with 2-, 3- or 4-wire connections and two sensors for thermometers with 2- and 3-wire connections only.

The installation of the component has to be specified in the certificate of conformity of the electrical equipment concerned. Damage to cables or insulation must be avoided during installation. The connecting cable must be laid in a strain-relieved manner. The cable ends must be firmly connected to suitable terminals. The sensor cable has to be connected to purpose-designed supply equipment for passive resistance sensors only which is approved for the operation of the unit and in accordance with the standard applicable for the resistance thermometer. The supply equipment must have one or two connections which are adequate for the existing wiring. The electrical parameters must not be exceeded.

The type of protection, encapsulation EEx m II, is provided by embedding the resistance element in potting compound and installation of the resistance thermometer, type WTH 160-250. The materials selected ensure a working temperature range of the resistance thermometer between –50°C and 180°C. The AC proof voltage of the thermometer is 1kV.

Parameters:

Operating voltage:	$U_i \leq 30$ V	
Sensor current, maximum:	2 mA	
Maximum power:	10 mW	
Maximum energy:	10 Joule	
Self-heating:	≤ 1K (at maximum power in still air)	
Nominal resistance:	100 Ω/0°C, 500 Ω/0°C, 1000 Ω/0°C,	
AC proof voltage:	1.0 kV/50 Hz, 1 min.	
Number of sensors:	1 or 2	
Connection method:	1 sensor:	2-, 3- or 4-wire connection
	2 sensors:	2- and 3-wire connection
Working temperature range:	-50°C ... 180°C	

Marking:

Every resistance thermometer WTH 160-250 is provided with a label at the end of the connection cable (see fig.).

H. Heinz Messwiderstände GmbH 0341 ← (Manufacturing date=check number: YYWW)
WTH 160-250 Ⓔx II 2 G EEx m II

This label gives all essential information on the resistance thermometer: type, manufacturing date, explosion hazard.

Manufacturer:

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